

Monday, February 09, 2009 (file cac195)

To: Dan Breedon

Fr: Ed Miller

Subj: Catastrophic fire mitigation

Ref A: Jennifer Bennett LA Times, Catastrophic fire in Victoria Province Australia, PBS News hour 2/09/09, 52 fires continuing to burn per CBS news 2/10, 1100 mi² extent, 173 lives lost to date, 60 mph winds, 100 foot flame heights, 117 deg F temperature, 7 % R.H, 750 homes destroyed and 5000 individuals made homeless per ER 2/10.

Ref B: IEEE special Issue on Wildland Fires and Biomass Burning, Dec 2008, Vol 1 #4, IJSTHZ (ISSN 1939-1404), IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing

Ref C: J. DeGalan & B. Middlehauff, Great Jobs for Environmental Majors, 2nd Ed, McGraw Hill 2008

Background: Butte County will want to find lessons that apply to catastrophic fire in our county. The latitude range of Victoria is 35-39 deg south and climate is similar to Butte County. Ref A documents some of the scenes of devastation and discussions with government leaders especially in regard to the stay and fight option by stakeholders. Ref B describes remote sensing approaches to define hazards. Ref C describes jobs for environmental majors and identifies Professional Associations that are the key players, e.g. The American Academy of Environmental Engineers, American Academy of Chemical Engineers, American Academy of Civil Engineers, American Society of Safety Engineers, Association for Facilities Engineering, National Society of Professional Engineers and the Electrical and Electronic Engineering professional group on geosciences and remote sensing.. The following action item candidates may be considered.

1. Determine the extent and effectiveness of reverse 911 warning service, media announcements, government agency guidance, and volunteer support for mandatory evacuation.
2. Establish policies for procurement of protective coatings and applicators on short notice for distribution to stakeholders in the path of wildfire predicted by approved software and current vegetation state.
3. Provide public road maps of industrial forest roads that are useful for evacuation and if necessary require frangible locks/chains/protected keys to assure emergency entry. Further assurance can be provided by telemetry.
4. Provide maps of cellular radio coverage in remote rural areas to assist in emergency rescue operations.
5. Require substantial water storage for each parcel or water system with appropriate fire service fittings.
6. Require that fire rated shutters or temporary window covering of windows and vents be provided in high fire risk areas in addition to 1 hour survival rating of new construction.

7. Establish a plan to achieve a vegetation basal area of < 90 square feet/acre within 100 feet of an approved dwelling. Free inspection service will be provided to support claims for minimum cost homeowner insurance in conjunction with state insurance commission enforcement.
8. Provide a plan for short term creation and long term maintenance of fuel breaks and forest/chaparral thinning geometry that will nominally reduce the extent of a wildland fire to <3000 acres and provide safe zones for fire suppression personnel.
9. Encourage Fastrack CHP (Combined heat power) systems in or near high fire risk areas to incentivize fuel reduction, micro-power, particulate control, local heat and CO2 utilization/sequestration.
10. Provide a monitoring capability to establish drought stress on vegetation to guide thinning to maintain a fire safe, disease free and productive forest environment.
11. Consider a policy of allowing residential construction in high fire risk areas subject to optimum vegetation management and rapid reporting of arson or lightning strike fire initiation.
12. Consider a lightning geolocation detection system and a supplementary volunteer service to identify and potentially suppress multiple strike caused fires during vulnerable periods.
13. Consider late fall herbicide treatment of chaparral regions and replant with thinly spaced merchantable tree species using condensation traps or perennial grass feeding by range animals or no-till planting.
14. Establish the resolution requirements and sampling periods for efficiently surveying vegetation in high fire risk portions of Butte County from appropriate platforms or on-ground observers.